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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/662,527	09/16/2003	Shigeo Honma	H-926-02	1714
86636	7590	03/16/2009	EXAMINER	
BRUNDIDGE & STANGER, P.C. 1700 DIAGONAL ROAD, SUITE 330 ALEXANDRIA, VA 22314				LAI, MICHAEL C
ART UNIT		PAPER NUMBER		
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Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

<b>Office Action Summary</b>	<b>Application No.</b>	<b>Applicant(s)</b>	
	10/662,527	HONMA ET AL.	
	<b>Examiner</b>	<b>Art Unit</b>	
	MICHAEL C. LAI	2457	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

#### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

#### Status

- 1) Responsive to communication(s) filed on 16 September 2003.
- 2a) This action is **FINAL**.                    2b) This action is non-final.
- 3) Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

#### Disposition of Claims

- 4) Claim(s) 13-53 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) Claim(s) \_\_\_\_\_ is/are allowed.
- 6) Claim(s) 13-53 is/are rejected.
- 7) Claim(s) \_\_\_\_\_ is/are objected to.
- 8) Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

#### Application Papers

- 9) The specification is objected to by the Examiner.
- 10) The drawing(s) filed on 16 September 2003 is/are: a) accepted or b) objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

#### Priority under 35 U.S.C. § 119

- 12) Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) All    b) Some \* c) None of:
1. Certified copies of the priority documents have been received.
  2. Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

#### Attachment(s)

- |   |   |
|---|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)   | 4) <input type="checkbox"/> Interview Summary (PTO-413)           |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)  | Paper No(s)/Mail Date. _____ .                                    |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)<br>Paper No(s)/Mail Date <u>9/16/2003, 1/30/2007, 10/15/2007</u> . | 5) <input type="checkbox"/> Notice of Informal Patent Application |
|   | 6) <input type="checkbox"/> Other: _____ .                        |

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**DETAILED ACTION**

1. This office action is responsive to communication filed on 9/16/2003.

Claims 13-53 have been examined.

***Priority***

2. Acknowledgment is made of applicant's claim for benefit of a CON of application no. 09/606,050, now PAT 6,950,871, filed on 06/29/2000.

***Specification***

3. The incorporation of essential material in the specification by reference to an unpublished U.S. application, foreign application or patent, or to a publication is improper. Applicant is required to amend the disclosure to include the material incorporated by reference, if the material is relied upon to overcome any objection, rejection, or other requirement imposed by the Office. The amendment must be accompanied by a statement executed by the applicant, or a practitioner representing the applicant, stating that the material being inserted is the material previously incorporated by reference and that the amendment contains no new matter. 37 CFR 1.57(f). Note that the specification needs to be updated to include U.S. Patent No. 6,950,871.

***Double Patenting***

4. The nonstatutory double patenting rejection is based on a judicially created doctrine grounded in public policy (a policy reflected in the statute) so as to prevent the unjustified or improper timewise extension of the "right to exclude" granted by a patent and to prevent possible harassment by multiple assignees. A nonstatutory obviousness-type double patenting rejection is appropriate where the conflicting claims are not identical, but at least one examined application

claim is not patentably distinct from the reference claim(s) because the examined application claim is either anticipated by, or would have been obvious over, the reference claim(s). See, e.g., *In re Berg*, 140 F.3d 1428, 46 USPQ2d 1226 (Fed. Cir. 1998); *In re Goodman*, 11 F.3d 1046, 29 USPQ2d 2010 (Fed. Cir. 1993); *In re Longi*, 759 F.2d 887, 225 USPQ 645 (Fed. Cir. 1985); *In re Van Ornum*, 686 F.2d 937, 214 USPQ 761 (CCPA 1982); *In re Vogel*, 422 F.2d 438, 164 USPQ 619 (CCPA 1970); and *In re Thorington*, 418 F.2d 528, 163 USPQ 644 (CCPA 1969).

A timely filed terminal disclaimer in compliance with 37 CFR 1.321(c) or 1.321(d) may be used to overcome an actual or provisional rejection based on a nonstatutory double patenting ground provided the conflicting application or patent either is shown to be commonly owned with this application, or claims an invention made as a result of activities undertaken within the scope of a joint research agreement.

Effective January 1, 1994, a registered attorney or agent of record may sign a terminal disclaimer. A terminal disclaimer signed by the assignee must fully comply with 37 CFR 3.73(b).

5. Claim 13 is provisionally rejected on the ground of nonstatutory obviousness-type double patenting as being unpatentable over claim 14 of copending Application No. 10/662,473. Although the conflicting claims are not identical, they are not patentably distinct from each other because claim 14 of copending Application No. 10/662,473 contains every element of claim 13 of the instant application (see the following table) and thus **anticipates** the claim of the instant application. Claim 13 of the instant application therefore are not patently distinct from the copending application and as such are unpatentable over obvious-type double patenting. This is a provisional obviousness-type double patenting rejection because the conflicting claims have not in fact been patented.

Instant Application 10/662,527	U.S. Application 10/662,473
<p>13. (New) A computer system comprising:</p> <ul style="list-style-type: none"> <li>a plurality of client computers;</li> <li>a server computer connected to said plurality of client computers via a local area network;</li> <li>a storage, which has a plurality of disk drives and keeps data in said plurality of disk drives, arranged to communicate with said server computer; and</li> <li>a backup device connected to said storage via a storage area network, wherein said storage has a pair of volumes comprising a primary volume and a secondary volume which is a replica of said primary volume, receives an <b>instruction for splitting a pair of volumes</b>, and receives an instruction for transferring data in said secondary volume to said backup device, such that said transferred data is transferred to said backup device <b>via said storage area network</b> without passing on said local area network.</li> </ul>	<p>14. (New) A computer system which has plural client computers, plural various servers, plural various storages which keep data,</p> <ul style="list-style-type: none"> <li>a local area network (LAN) which connects said computers and said servers, and</li> <li>a storage area network (SAN) which lies between said servers and said storages;</li> </ul> <p>wherein said SAN forms a switched circuit network which is arranged to connect connecting any of said servers with any of said storages through fiber channel switches (FC switches), and</p> <p>wherein when data in one of said storages is backed up to a backup device in a non-disruptive manner, said storage has a function of receiving an instruction of <b>a volume split</b> from one of said servers via said SAN, a function of <b>assuming that data in a primary volume were kept in a secondary volume at the time of said instruction</b>, and a function of <b>backing up said data from said secondary volume to a backup device via said SAN</b>.</p>

#### ***Claim Rejections - 35 USC § 112***

6. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

7. Claims 13-53 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.
8. The claims are generally narrative and indefinite, failing to conform with current U.S. practice. They appear to be a literal translation into English from a foreign document and are replete with grammatical and idiomatic errors. For example, claim 15 recites the limitation "...receive an instruction **for assigning** the secondary volume **for creating** a replica of said primary volume."
9. Claim 13 recites the limitation "a pair of volumes" in both lines 10 and 13. It is unclear whether these two pair of volumes are the same or not.
10. Claim 13 recites the limitation "said transferred data" in line 15. There is insufficient antecedent basis for this limitation in the claim.
11. Claim 14 recites the limitation "said pair of volumes are configured by **using** said plurality of disk drives" in lines 2-3. It is unclear how said plurality of disk drives are used to configure said pair of volumes. Claims 18, 23, 29, 33, 40, 44, 49, and 53 recite similar limitations and are rejected for the same reason.

***Claim Rejections - 35 USC § 103***

12. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

13. Claims 13-23 are rejected under 35 U.S.C. 103(a) as being unpatentable over U.S. Patent No. 6,148,414 to Brown et al. (hereinafter "Brown") in view of U.S. Patent No. 6,401,178 to Gagne et al. (hereinafter "Gagne"), and further in view of U.S. Patent No. 6,460,113 to Schubert et al. (hereinafter "Schubert").

Regarding claim 13, Brown discloses a computer system (Fig. 1) which has a plurality of client computers (Fig. 1, "101" - "10N"), a server computer (Fig. 1, "201" - "20N") connected to said plurality of client computers via a local area network (column 6, lines 14-18), a storage, which has a plurality of disk drives and keeps data in said plurality of disk drives, arranged to communicate with said server computer (Fig. 1, "45"), and a backup device connected to said storage via a storage area network (Fig. 1, "50"; column 1 line 66 through column 2 line 6, sharing redundancy group management).

Brown shows the claimed invention, but fails to explicitly disclose an instruction for splitting a pair of volumes.

Nonetheless these features are well known in the art of storage management and would have been an obvious modification to the system disclosed by Brown, as evidenced by Gagne. In an analogous art, Gagne discloses a data storage facility comprises first, second and third data stores. Each of the second and

third data stores can be selectively connected as mirrors (**synchronously replicated**) for the first data store at different times. Each of the second and third data stores can also be split via a **SPLIT command** (column 1, lines 43-57, column 2, lines 54-61, and column 8 lines 23 through column 10 line 7) and re-established via a RE-ESTABLISH command (column 10 line 9 through column 11 line 8).

It would have been obvious to a person with ordinary skill in the art at the time the invention was made to incorporate Gagne's teaching into Brown's system for the purpose of updating the primary volume and secondary volume in an efficient manner by incorporating these well-known features, thereby providing a data storage facility that allows multiple copying of data from a primary device and the updating of those copies efficiently and transparently to any interaction between a host device and the data in the primary storage device (column 2, lines 49-53).

Brown and Gagne show the substantial features of the claimed invention, but fails to explicitly disclose a function of backing up said data from said secondary volume to a backup device via said SAN without passing on said local area network.

Nonetheless these features are well known in the art of storage management and would have been an obvious modification to the system disclosed by Brown and Gagne, as evidenced by Schubert. In an analogous art, Schubert discloses that a copy is made from the primary volume to the secondary volume, and the

copy is transferred to the backup device via a SAN without transferring data on computer network 32 (column 4, lines 54-61 and column 5, lines 35-41).

It would have been obvious to a person with ordinary skill in the art at the time the invention was made to incorporate Schubert's teaching into Brown's and Gagne's system for the purpose of reducing network traffic by incorporating these well-known features, thereby substantially reducing the time necessary to perform backup operations (column 2, lines 29-34).

Regarding claim 14, Schubert further discloses wherein said pair of volumes are configured by using said plurality of disk drives (column 4, lines 30-33).

Regarding claim 15, Schubert further discloses wherein said storage is arranged to receive an instruction for assigning the secondary volume for creating a replica of said primary volume (column 4, lines 54-61).

Regarding claim 16, Schubert further discloses wherein said instruction for assigning the secondary volume for creating a replica of said primary volume is issued by said storage (column 5, lines 24-48).

Regarding claim 17, Schubert further discloses wherein said instruction for assigning the secondary volume for creating a replica of said primary volume is issued by one of said client computers (column 4, lines 22-40).

Regarding claim 18, Schubert further discloses wherein said pair of volumes are configured by using said plurality of disk drives (column 4, lines 30-33).

Regarding claim 19, Schubert further discloses wherein said storage is arranged to receive an instruction for creating said secondary volume (column 4, lines 54-61).

Regarding claim 20, Schubert further discloses wherein said storage is arranged to receive an instruction for assigning the secondary volume for creating a replica of said primary volume (column 4, lines 54-61).

Regarding claim 21, Schubert further discloses wherein said instruction for assigning the secondary volume for creating a replica of said primary volume is issued by said storage (column 5, lines 24-48).

Regarding claim 22, Schubert further discloses wherein said instruction for assigning the secondary volume for creating a replica of said primary volume is issued by one of said client computers (column 4, lines 22-40).

Regarding claim 23, Schubert further discloses wherein said pair of volumes are configured by using said plurality of disk drives (column 4, lines 30-33).

14. Claims 24-33 are rejected under 35 U.S.C. 103(a) as being unpatentable over U.S. Patent No. 6,148,414 to Brown et al. (hereinafter "Brown") in view of U.S. Patent No. 6,401,178 to Gagne et al. (hereinafter "Gagne") and U.S. Patent No. 6,460,113 to Schubert et al. (hereinafter "Schubert"), and further in view of "White Paper: Pathlight & Computer Associates Deliver Server-Free Backup" (hereinafter Pathlight).

Regarding claim 24, Brown, Gagne, and Schubert disclose the claimed invention except for wherein said transferred data is transferred to said backup

device via said storage area network without passing through said server computer. Pathlight discloses a system for server free back up system on a SAN including management software for controlling of serverless backup operations (page 2). Pathlight discloses a complete backing up process, which requires no relaying of data to a server, instead, ARCserveIT backup/restore application initiates backup to a backup storage device via server and intelligent SAN Gateway that enables sharing of storage resources across an entire enterprise. A backup interface application allows for administration and management of data (see page 3, first column lines 9-10). Data is moved from a source to a destination within the SAN (see figure 4). Given this feature, a person of ordinary skill in the art would have readily recognized the desirability and advantages of modifying the system shown by Brown, Gagne, and Schubert to employ the features shown by Pathlight in order to increase server side performance (see page 3, last paragraph).

Regarding claim 25, Schubert further discloses wherein said storage is arranged to receive an instruction for creating said secondary volume (column 4, lines 54-61).

Regarding claim 26, Schubert further discloses wherein said storage is arranged to receive an instruction for assigning the secondary volume for creating a replica of said primary volume (column 4, lines 54-61).

Regarding claim 27, Schubert further discloses wherein said instruction for assigning the secondary volume for creating a replica of said primary volume is issued by said storage (column 5, lines 24-48).

Regarding claim 28, Schubert further discloses wherein said instruction for assigning the secondary volume for creating a replica of said primary volume is issued by one of said client computers (column 4, lines 22-40).

Regarding claim 29, Schubert further discloses wherein said pair of volumes are configured by using said plurality of disk drives (column 4, lines 30-33).

Regarding claim 30, Schubert further discloses wherein said storage is arranged to receive an instruction for assigning the secondary volume for creating a replica of said primary volume (column 4, lines 54-61).

Regarding claim 31, Schubert further discloses wherein said instruction for assigning the secondary volume for creating a replica of said primary volume is issued by said storage (column 5, lines 24-48).

Regarding claim 32, Schubert further discloses wherein said instruction for assigning the secondary volume for creating a replica of said primary volume is issued by one of said client computers (column 4, lines 22-40).

Regarding claim 33, Schubert further discloses wherein said pair of volumes are configured by using said plurality of disk drives (column 4, lines 30-33).

15. Claims 34 and 45-53 are rejected under 35 U.S.C. 103(a) as being unpatentable over U.S. Patent No. 6,148,414 to Brown et al. (hereinafter "Brown") in view of U.S. Patent No. 6,401,178 to Gagne et al. (hereinafter "Gagne") and U.S. Patent

No. 6,460,113 to Schubert et al. (hereinafter "Schubert"), and further in view of Tsumura ("Let's Begin With 'What's SAN'", Computopia, Computer Age Co., Ltd., February 1, 2000, Vol. 34, No. 401, pp. 94-105 with translation).

Regarding claim 34, Brown, Gagne, and Schubert disclose the claimed invention except for the address of said backup device on said storage area network. Tsumura discloses an agent function that specifies the address for the backup device (page 17, Section 7, lines 24-26). It would have been obvious to a person with ordinary skill in the art at the time the invention was made to incorporate Tsumura's teaching into Brown's, Gagne's and Schubert's system for the purpose of direct communicating with the backup device without looking up or inquiring the address for the backup device by incorporating this well-known feature, thereby substantially reducing the time necessary to perform backup operations.

Regarding claim 45, Schubert further discloses wherein said storage is arranged to receive an instruction for creating said secondary volume (column 4, lines 54-61).

Regarding claim 46, Schubert further discloses wherein said storage is arranged to receive an instruction for assigning the secondary volume for creating a replica of said primary volume (column 4, lines 54-61).

Regarding claim 47, Schubert further discloses wherein said instruction for assigning the secondary volume for creating a replica of said primary volume is issued by said storage (column 5, lines 24-48).

Regarding claim 48, Schubert further discloses wherein said instruction for assigning the secondary volume for creating a replica of said primary volume is issued by one of said client computers (column 4, lines 22-40).

Regarding claim 49, Schubert further discloses wherein said pair of volumes are configured by using said plurality of disk drives (column 4, lines 30-33).

Regarding claim 50, Schubert further discloses wherein said storage is arranged to receive an instruction for assigning the secondary volume for creating a replica of said primary volume (column 4, lines 54-61).

Regarding claim 51, Schubert further discloses wherein said instruction for assigning the secondary volume for creating a replica of said primary volume is issued by said storage (column 5, lines 24-48).

Regarding claim 52, Schubert further discloses wherein said instruction for assigning the secondary volume for creating a replica of said primary volume is issued by one of said client computers (column 4, lines 22-40).

Regarding claim 53, Schubert further discloses wherein said pair of volumes are configured by using said plurality of disk drives (column 4, lines 30-33).

16. Claims 35-44 are rejected under 35 U.S.C. 103(a) as being unpatentable over U.S. Patent No. 6,148,414 to Brown et al. (hereinafter "Brown") in view of U.S. Patent No. 6,401,178 to Gagne et al. (hereinafter "Gagne"), U.S. Patent No. 6,460,113 to Schubert et al. (hereinafter "Schubert"), Tsumura ("Let's Begin With 'What's SAN'", Computopia, Computer Age Co., Ltd., February 1, 2000, Vol. 34, No. 401, pp. 94-105 with translation), and further in view of "White Paper:

Pathlight & Computer Associates Deliver Server-Free Backup" (hereinafter Pathlight).

Regarding claim 35, Brown, Gagne, Schubert, and Tsumura disclose the claimed invention except for wherein said transferred data is transferred to said backup device via said storage area network without passing through said server computer. Pathlight discloses a system for server free back up system on a SAN including management software for controlling of serverless backup operations (page 2). Pathlight discloses a complete backing up process, which requires no relaying of data to a server, instead, ARCserveLT backup/restore application initiates backup to a backup storage device via server and intelligent SAN Gateway that enables sharing of storage resources across an entire enterprise. A backup interface application allows for administration and management of data (see page 3, first column lines 9-10). Data is moved from a source to a destination within the SAN (see figure 4). Given this feature, a person of ordinary skill in the art would have readily recognized the desirability and advantages of modifying the system shown by Brown, Gagne, Schubert, and Tsumura to employ the features shown by Pathlight in order to increase server side performance (see page 3, last paragraph).

Regarding claim 36, Schubert further discloses wherein said storage is arranged to receive an instruction for creating said secondary volume (column 4, lines 54-61).

Regarding claim 37, Schubert further discloses wherein said storage is arranged to receive an instruction for assigning the secondary volume for creating a replica of said primary volume (column 4, lines 54-61).

Regarding claim 38, Schubert further discloses wherein said instruction for assigning the secondary volume for creating a replica of said primary volume is issued by said storage (column 5, lines 24-48).

Regarding claim 39, Schubert further discloses wherein said instruction for assigning the secondary volume for creating a replica of said primary volume is issued by one of said client computers (column 4, lines 22-40).

Regarding claim 40, Schubert further discloses wherein said pair of volumes are configured by using said plurality of disk drives (column 4, lines 30-33).

Regarding claim 41, Schubert further discloses wherein said storage is arranged to receive an instruction for assigning the secondary volume for creating a replica of said primary volume (column 4, lines 54-61).

Regarding claim 42, Schubert further discloses wherein said instruction for assigning the secondary volume for creating a replica of said primary volume is issued by said storage (column 5, lines 24-48).

Regarding claim 43, Schubert further discloses wherein said instruction for assigning the secondary volume for creating a replica of said primary volume is issued by one of said client computers (column 4, lines 22-40).

Regarding claim 44, Schubert further discloses wherein said pair of volumes are configured by using said plurality of disk drives (column 4, lines 30-33).

***Conclusion***

**Examiner's Note:** Examiner has cited particular columns and line numbers in the references applied to the claims above for the convenience of the applicant. Although the specified citations are representative of the teachings of the art and are applied to specific limitations within the individual claim, other passages and figures may apply as well. It is respectfully requested from the applicant in preparing responses, to fully consider the references in entirety as potentially teaching all or part of the claimed invention, as well as the context of the passage as taught by the prior art or disclosed by the Examiner.

In the case of amending the claimed invention, Applicant is respectfully requested to indicate the portion(s) of the specification which dictate(s) the structure relied on for proper interpretation and also to verify and ascertain the metes and bounds of the claimed invention.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Michael C. Lai whose telephone number is (571) 270-3236. The examiner can normally be reached on M-F 8:30 - 5:00 EST.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Ario Etienne can be reached on (571) 272-4001. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

Michael C. Lai  
13MAR2009

/YVES DALENCOURT/  
Primary Examiner, Art Unit 2457